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CONCOMITANT BINARY FORMS IN TERMS OF THE ROOTS.*

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Tables of the irreducible Covariants and Invariants of the lower quantics including the Sextic, and of pairs of the first four quantics (including the linear quantic).

The arrangement of the following Tables is that described in Vol. IX, p. 116. It should be noticed that the symbol Σ used in Tables V–X is a symbol of double summation, so that the root expressions are symmetric with regard to the primed roots and also symmetric with regard to the unprimed roots; thus, $\Sigma(a\alpha')\beta\beta' = (a\alpha')\beta\beta' + (\alpha\beta')\beta\alpha' + (\beta\alpha')\alpha\beta' + (\beta\beta')a\alpha'$. In the Tables attention is called to the *unique* forms, where a *unique* form is understood to be a form which in its system is the only covariant of its order, weight and degree. The unique forms are of special interest in that they may be derived from any transvectant of the given order, weight and degree. It should be emphasized that the particular root symbol given for any particular covariant or invariant is often not the only root symbol that might be given for that form and that this is true not only among the unique forms. A simple example will make clear that different root symbols may exist for the same form; thus the terms $(a\beta)(\alpha\gamma)\beta\gamma\delta^2\epsilon^2$ and $(\alpha\beta)^2\gamma^2\delta^2\epsilon^2$ occur in the development of $\{ff'\}^2$ of the Quintic and $\Sigma(\alpha\beta)(\alpha\gamma)\beta\gamma\delta^2\epsilon^2$ and $\Sigma(\alpha\beta)^2\gamma^2\delta^2\epsilon^2$ are both root symbols for H of the Quintic, since this is an irreducible form in the system of the Quintic and $\{ff'\}^2$ is its transvectant.

In the transvectants in the systems of the single quantics, the quantic itself is denoted by f . In the systems of the pairs of quantics, the first mentioned quantic is denoted by $f_{(1)}$ and all of its invariants and covariants have the subscript (1); and the second quantic is denoted by $f_{(2)}$ and all of its invariants and covariants have the subscript (2). Whenever there occurs a transvectant of any covariant over itself the letter denoting the second covariant is primed; thus in $\{ff'\}^2$, $f = f'$, and in $\{HH'\}^2$, $H = H'$.

* This paper is supplementary to that which appeared in Nos. 4 and 5 of Vol. IX, and contains the Tables to which reference was made.

TABLE I.

QUADRATIC.						
No.	Name.	Cayley Symbol.	A. C. Symbol.	Root Symbol.	Root Differences.	Transvectant.
1	D	$\overline{12}^2$	$(ab)^2$	$(a\beta)^2$	$(a-\beta)^2$	$\{ff'\}^2$
CUBIC.						
1*	$H(\Delta)$	$\overline{12}^2$	$(ab)^2ab$	$\Sigma(a\beta)^2\gamma^2$	$\Sigma(a-\beta)^2(x-\gamma)^2$	$\{ff'\}^2$
2	$J(Q)$	$\overline{12}^2 \cdot 13$	$(ab)^2(ac)bc^2$	$\Sigma(a\beta)^2(\alpha\gamma)\beta\gamma^2$	$\Sigma(a-\beta)^2(a-\gamma)(x-\beta)$ $(x-\gamma)^2$	$\{fH\}$
3	$D(R)$	$\overline{12}^2 \cdot 34 \cdot 13 \cdot 24$	$(ab)^2(cd)(ac)(bd)$	$(a\beta)^2(\alpha\gamma)^2(\beta\gamma)^2$	$(a-\beta)^2(a-\gamma)^2\beta-\gamma^2$	$\{HH'\}^2$

See pp. 106, 138
See Art. 45

TABLE II.

QUARTIC.						
No.	Name.	Cayley Symbol.	A. C. Symbol.	Root Symbol.	Transvectant.	Remarks.
1*	H	$\overline{12}^2$	$(ab)^2a^2b^2$	$\Sigma(a\beta)^2\gamma^2\delta$	$\{ff'\}^2$	See Art. 46 See Art. 48 See Art. 47
2*	$S(i)$	$\overline{12}^4$	$(ab)^4$	$\Sigma(a\beta)^2(\gamma\delta)^2$	$\{ff''\}^4$	
3*	$J(T)$	$\overline{12}^2 \cdot 13$	$(ab)^2(ac)ab^2c^3$	$\Sigma(a\beta)^2(\alpha\gamma)\beta\gamma^2\delta^3$	$\{fH\}$	
4*	$T(j)$	$\overline{12}^2 \cdot 23 \cdot 13$	$(ab)^2(bc)^2(ac)^2$	$\Sigma(a\beta)^2(\gamma\delta)^2(\alpha\gamma)(\beta\delta)$	$\{fH'\}^4$	

* A unique form.

TABLE III.

QUINTIC.				
Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
H	$(ab)^2a^3b^3$	$\Sigma(a\beta)^2\gamma^2\delta^2\epsilon^2$	$\{ff'\}^2$	Clebsch's $\{Sf\}^2$
S	$(ab)^4ab$	$\Sigma(a\beta)^2(\gamma\delta)^2\epsilon^2$	$\{ff'\}^4$	
J	$(ab)^2(ac)a^2b^3c^4$	$\Sigma(a\beta)^2(ac)\beta\gamma^2\delta^3\epsilon^3$	$\{fH\}$	
T	$(ab)^2(bc)^2(ac)^2abc$	$\Sigma(a\beta)^2(\gamma\delta)^2(ac)(\beta\delta)\epsilon^3$	$\{fH\}^4$	
C_1	$(ab)^4(ac)bc^4$	$\Sigma(a\beta)^2(\gamma\delta)^2(ac)\beta\gamma\delta\epsilon^2$	$\{Sf\}$	
C_2	$(ab)^4(cd)^2(ac)bc^2d^3$	$\Sigma(a\beta)^4(\gamma\delta)^2(\gamma\epsilon)\gamma^2\delta\epsilon^3$	$\{SH\}$	Clebsch's $\{S^2f\}^3$
C_3	$(ab)^4(cd)^2(ac)(bc)cd^3$	$\Sigma(a\beta)^4(\gamma\delta)^2(\gamma\epsilon)^2\delta\epsilon^2$	$\{SH\}^2$	
C_4	$(ab)^4(cd)^2(de)^2(ce)^2(ac)bde$	$\Sigma(a\beta)^4(\gamma\delta)^2(ac)(\beta\epsilon)(\gamma\epsilon)\delta\epsilon^2$	$\{ST\}$	
a	$(ab)^4(cd)^2(de)^2(ce)^2(ac)(bde)$	$\Sigma(a\beta)^4(\gamma\delta)^2(ac)(\beta\epsilon)(\gamma\epsilon)(\delta\epsilon)\epsilon$	$\{ST\}^2$	
A	$(ab)^4(cd)^4(ac)(bd)$	$\Sigma(a\beta)^4(\gamma\delta)^2(\gamma\epsilon)^2(\delta\epsilon)^2$	$\{SS'\}^2$	
τ	$(ab)^4(cd)^4(ef)^2(ae)(be)(cf)(df)ef$	$\Sigma(a\beta)^6(\gamma\delta)^4(\gamma\epsilon)^2(\delta\epsilon)^2\epsilon^2$	$\{TT'\}^2$	See foot-note, p. 114. Salmon's J invariant
β	$(ab)^4(cd)^4(ef)^2(fl)^2(el)^2(ce)(df)(al)b$	$\Sigma(a\beta)^6(\gamma\delta)^4(\delta\epsilon)^2(\gamma\epsilon)^2(ac)(\beta\epsilon)\gamma$	$\{uS\}$	
C_5	$(ab)^4(cd)^2(ac)(bc)(ef)^4(ec)d^3f$	$\Sigma(a\beta)^6(\gamma\delta)^4(\gamma\epsilon)^2(\delta\epsilon)\delta\epsilon^3$	$\{C_3S\}$	
C_6	$(ab)^4(cd)^2(ac)(bc)(ce)d^3e^4$	$\Sigma(a\beta)^4(\gamma\delta)^2(\gamma\epsilon)^2(ad)\beta\gamma\delta\epsilon^3$	$\{C_3f\}$	
C_7	$(ab)^2(bc)^2(ac)^2(de)^2(cf)^2(df)^2(ad)(be)(cm)fn^4$	$\Sigma(a\beta)^6(\gamma\delta)^4(\gamma\epsilon)^3(\delta\epsilon)^2a\beta\delta\epsilon^2$	$\{f\tau\}$	

* A unique form.

TABLE III—Continued.

Name.	QUINTIC.			
	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
C_8	$(ab)^2(bc)^2(ac)^2(de)^2(ef)^2(df)^2(ad)(be)(lm)^2(mo)^2$ $(lo)^2(ct)fmo$	$\Sigma(a\beta)^8(\gamma\delta)^4(\gamma\epsilon)^4(\delta\epsilon)^3(\alpha\tau)(\beta\epsilon)\delta^2\epsilon$	$\{T\tau\}$	Compare with Faà de Bruno's I_{12} Faà de Bruno's I_8 is another expression for K .
γ	$(ab)^2(bc)^2(ac)^2(de)^2(ef)^2(df)^2(ad)(be)(lm)^4(or)^2$ $(rt)^2(ot)^2(lo)(mr)(ct)f$	$\Sigma(a\beta)^{10}(\gamma\delta)^6(\gamma\epsilon)^5(\delta\epsilon)^4(\alpha\epsilon)(\beta\epsilon)\delta$	$\{\alpha\tau\}$	
L	$(ab)^2(bc)^2(ac)^2(de)^2(ef)^2(df)^2(ad)(bc)(lm)^2(mo)^2$ $(lo)^2(rs)^2(rn)^2(sn)^2(lr)(ms)(cs)(fn)$	$\Sigma(a\beta)^8(\gamma\delta)^4(\alpha\tau)^4(\gamma\epsilon)^4(\delta\epsilon)^6(\beta\delta)^2(\beta\epsilon)^2$	$\{\tau\tau'\}^2$	
ϑ	$(ab)^4(cd)^2(ce)^2(de)^2(fl)^2(fn)^2(ln)^2(cf)(dl)(ae)bn$	$\Sigma(a\beta)^6(\gamma\delta)^4(\gamma\epsilon)^4(\delta\epsilon)^3\delta\epsilon$	$\{S\tau\}$	
K	$(ab)^4(cd)^2(ce)^2(de)^2(fl)^2(fn)^2(ln)^2(cf)(dl)(ae)$ (bn)	$\Sigma(a\beta)^8(\gamma\delta)^4(\gamma\epsilon)^4(\delta\epsilon)^4$	$\{S\tau\}^2$	
δ	$(ab)^4(cd)^2(ce)^2(de)^2(fl)^2(fn)^2(ln)^2(cf)(dl)(ae)$ $(oq)^4(rs)^2(rt)^2(or)(qs)(bt)n$	$\Sigma(a\beta)^{12}(\gamma\delta)^8(\alpha\epsilon)(\beta\epsilon)(\gamma\epsilon)^5(\delta\epsilon)^5\epsilon$	$\{\delta\alpha\}$	
I	$(ab)^2(bc)^2(ac)^2(de)^2(ef)^2(df)^2(ad)(be)(lm)^4(or)^2$ $(rt)^2(ot)^2(lo)(mr)(ct)(hi)^4(jk)^4(uv)^2(vw)^2(uw)^2$ $(jn)(kv)(hw)(fi)$	$\Sigma(a\beta)^{16}(\gamma\delta)^{11}(\gamma\epsilon)^7(\delta\epsilon)^7(\alpha\epsilon)^2(\beta\epsilon)^2$	$\{\beta\gamma\}$	

* A unique form.

TABLE IV.

SEXTIC.				
Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
H	$(ab)^2a^4b^4$	$\Sigma(a\beta)^2\gamma^2\delta^2\varepsilon^2\lambda^2$	$\{ff'\}^2$	
S	$(ab)^4a^2b^2$	$\Sigma(a\beta)^2(\gamma\delta)^2\varepsilon^2\lambda^2$	$\{ff'\}^4$	
J	$(ab)^2(ac)a^3b^4c^5$	$\Sigma(a\beta)^2(ac)\beta\gamma^2\delta^3\varepsilon^3\lambda^3$	$\{fH\}$	
A_6	$(ab)^6$	$\Sigma(a\beta)^2(\gamma\delta)^2(\varepsilon\lambda)^2$	$\{ff'\}^6$	
C_1	$(ab)^4(ac)ab^2c^5$	$\Sigma(a\beta)^2(\gamma\delta)^2(a\varepsilon)\beta\gamma\delta\varepsilon\lambda^3$	$\{Sf\}$	
C_2	$(ab)^4(ac)^3b^2c^4$	$\Sigma(a\beta)^2(\gamma\delta)^2(a\varepsilon)(\beta\varepsilon)\gamma\delta\varepsilon\lambda^3$	$\{Sf\}^2$	Clebsch's p
l	$(ab)^4(ac)^2(bc)^2c^2$	$\Sigma(a\beta)^2(\gamma\delta)^2(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)\varepsilon\lambda$	$\{Sf\}^4$	
C_3	$(ab)^4(cd)^2(ac)ab^2c^2d^4$	$\Sigma(a\beta)^4(\gamma\delta)^2(\gamma\varepsilon)\gamma\delta^2\varepsilon^3\lambda^4$	$\{HS\}$	See C_3 of Quintic
B	$(ab)^4(cd)^4(ac)^2(bd)^2$	$\Sigma(a\beta)^4(\gamma\delta)^4(\varepsilon\lambda)^4$	$\{SS'\}^4$	
C_a	$(ab)^4(ac)^2(bc)^2(cd)cd^5$	$\Sigma(a\beta)^2(\gamma\delta)^2(a\varepsilon)^2(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)\beta\gamma\delta\varepsilon\lambda^2$	$\{fl\}$	
C_b	$(ab)^4(ac)^2(bc)^2(cd)^2d^4$	$\Sigma(a\beta)^2(\gamma\delta)^2(a\varepsilon)^2(\beta\varepsilon)(\gamma\lambda)^2(\delta\lambda)\beta\delta\varepsilon\lambda$	$\{fl\}^2$	
C_5	$(ab)^4(ac)^2(bc)^2(de)^2(cd)cd^3e^4$	$\Sigma(a\beta)^4(\gamma\delta)^2(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)^2(\delta\lambda)\gamma\delta^2\varepsilon^2\lambda^2$	$\{Hl\}$	See C_5 of Quintic
C_c	$(ab)^4(ac)^2(bc)^2(de)^4(cd)cde^2$	$\Sigma(a\beta)^4(\gamma\delta)^4(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)(\varepsilon\lambda)^2\lambda^2$	$\{Sl\}$	
m	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2e^2$	$\Sigma(a\beta)^4(\gamma\delta)^4(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)(\varepsilon\lambda)^2\varepsilon\lambda$	$\{Sl\}^2$	
C	$(ab)^4(ac)^2(bc)^2(de)^4(df)^2(cf)^2$	$\Sigma(a\beta)^4(\gamma\delta)^4(\varepsilon\lambda)^2(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)$	$\{ul\}^2$	
λ	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(fl)^4(fu)^2(lu)^2(en)en$	$\Sigma(a\beta)^6(\gamma\delta)^6(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\lambda)^2(\delta\lambda)^2(\varepsilon\lambda)^2\varepsilon\lambda$	$\{ml\}$	

* A unique form.

TABLE IV—Continued.

SEXING.				
Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
C_d	$(ab)^4(ac)^2(bc)^2(de)^4(df)^2(ce)cef^4$	$\Sigma(\alpha\beta)^4(\gamma\delta)^4(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\varepsilon)^2(\gamma\lambda)(\delta\lambda)\delta\varepsilon\lambda^4$	$\{C_2l\}$	Compare order and degree of 17 and 18
C_{aa}	$(ab)^4(ac)(de)^4(df)^2(ef)^2(hf)^2ac^5$	$\Sigma(\alpha\beta)^4(\gamma\delta)^4(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\lambda)^2(\delta\lambda)\delta\varepsilon^2\lambda^3$	$\{C_1l\}^2$	
C_e	$(ab)^4(ac)^2(bc)^2(cd)^2(ef)^4(elt)^2(ft)^2(ld)ld^3$	$\Sigma(\alpha\beta)^4(\gamma\delta)^4(a\varepsilon)^3(\beta\varepsilon)^2(\gamma\lambda)^3(\delta\lambda)^3\beta\varepsilon^2\lambda$	$\{C_6l\}$	
n	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(ln)^4(elt)^2n^2$	$\Sigma(\alpha\beta)^6(\gamma\delta)^6(a\varepsilon)(\beta\varepsilon)(\gamma\lambda)(\delta\lambda)(\varepsilon\lambda)^4\varepsilon\lambda$	$\{Sm\}^2$	
μ	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(ln)^4(elt)^2(rs)^4(rt)^2(st)^2(nt)nt$	$\Sigma(\alpha\beta)^8(\gamma\delta)^8(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\lambda)^2(\delta\lambda)^2(\varepsilon\lambda)^5\varepsilon\lambda$	$\{nl\}$	
ν	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(ln)^4(elt)^2(ont)^2(nr)^2(st)^4(rs)^2(nt)nt$	$\Sigma(\alpha\beta)^{10}(\gamma\delta)^{10}(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\lambda)^2(\delta\lambda)^2(\varepsilon\lambda)^7\varepsilon\lambda$	$\{mn\}$	
C_{ee}	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(lm)^4(ln)^2(mn)^2(mo)^2(eo)eo^3$	$\Sigma(\alpha\beta)^6(\gamma\delta)^6(a\varepsilon)^3(\beta\varepsilon)^2(\gamma\lambda)^3(\delta\lambda)^2(\varepsilon\lambda)^3\beta\delta\varepsilon\lambda$	$\{C_6m\}$	$\{mm'\}^2$ $\{\lambda n\}^2$
D	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(lm)^4(ln)^2(mn)^2(op)^4(no)^2(ep)^2$	$\Sigma(\alpha\beta)^8(\gamma\delta)^8(\varepsilon\lambda)^6(a\varepsilon)^2(\beta\varepsilon)^2(\gamma\lambda)^2(\delta\lambda)^2$		
E	$(ab)^4(ac)^2(bc)^2(de)^4(cd)^2(ft)^4(fn)^2(ln)^2(en)(op)^4(oq)^2(pq)^2(rs)^4(qr)^2(to)^4(st)^2(ve)(vm)$	$\Sigma(\alpha\beta)^{12}(\gamma\delta)^{12}(\varepsilon\lambda)^9(a\varepsilon)^3(\beta\varepsilon)^3(\gamma\lambda)^3(\delta\lambda)^3$		

* A unique form.

TABLE V

LINEAR AND LINEAR.				
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.
1*	I	(aa')	(aa')	$\{f_{(0)}f_{(2)}\}$
LINEAR AND QUADRIC.				
1*	C	$(aa')a$	$\Sigma(aa')\beta$	$\{f_{(0)}f_{(2)}\}$
2*	I	$(aa')(ab')$	$(aa')(\beta a')$	$\{Cf_{(0)}\}$
LINEAR AND CUBIC.				
1*	C_1	$(aa')a^2$	$\Sigma(aa')\beta\gamma$	$\{f_{(0)}f_{(2)}\}$
2*	C'_2	$(ab)^2(aa')b$	$\Sigma(a\beta)^2(\gamma a')\gamma$	$\{H_{(2)}f_{(0)}\}$
3*	C_3	$(ab)^2(ac)(ba')c^2$	$\Sigma(a\beta)^2(a\gamma)(\beta a')\gamma^2$	$\{J_{(2)}f_1\}$
4*	C_4	$(aa')(ab')a$	$\Sigma(aa')(\beta a')\gamma$	$\{C_1f_{(0)}\}$
5*	I_1	$(ab)^2(aa')(bb')$	$\Sigma(a\beta)^2(\gamma a')^2$	$\{C_2f_{(0)}\}$
6*	C_5	$(ab)^2(ac)(ba')(cb')c$	$\Sigma(a\beta)^2(a\gamma)(a'\gamma)^2\beta$	$\{C_3f_{(0)}\}$
7*	I_2	$(aa')(ab')(ac')$	$(aa')(\beta a')(\gamma a')$	$\{C_4f_{(0)}\}$
8*	I_3	$(ab)^2(ac)(ba')(cb')(cc')$	$\Sigma(a\beta)^2(a\gamma)(a'\beta)(a'\gamma)^2$	$\{C_5f_{(0)}\}$

* A unique form.

Also $\{C_1f_{(2)}\}^2$

Also $\{C_2f_{(2)}\}$

See No. 2 of Linear and Quadric

Also $\{C_1C'_1\}^2$

Also $\{C_1C_2\}$

Also $\{C_2C_4\}$

TABLE VI.

LINEAR AND QUARTIC.					
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
1*	C_1	$(aa')a^3$	$\Sigma(aa')\beta\gamma\delta$	$\{f_{(0)}f_{(2)}\}$	Also $\{C_1f_{(2)}\}^2$ Also $\{C_2'f_{(2)}\}$
2*	C_2	$(aa')(ab)^2ab^2$	$\Sigma(a\beta)^2(\gamma a')\gamma\delta^2$	$\{f_{(0)}H_{(2)}\}$	
3	C_3	$(ab)^2(ac)(aa')b^2c^2$	$\Sigma(a\beta)^2(\alpha\gamma)(\beta a')\gamma^2\delta^3$	$\{f_{(0)}J_{(2)}\}$	
4*	C_4	$(aa')(ab')a^2$	$\Sigma(aa')(\beta a')\gamma\delta$	$\{f_{(0)}C_1\}$	Also $\{C_1C_1'\}^2$ Also $\{f_{(0)}C_3\}$
5	C_5	$(ab)^2(aa')(ab')b^2$	$\Sigma(a\beta)^2(\gamma a')\gamma\delta^2$	$\{f_{(0)}C_2\}$	
6	C_6	$(ab)^2(ac)(ca')(cb')ab^2c$	$\Sigma(a\beta)^2(aa')(\gamma a')(\beta\gamma)\gamma\delta^3$	$\{C_1C_2\}$	Also $\{C_1C_4'\}^2$ Also $\{C_7H_{(2)}\}$
7*	C_7	$(aa')(ab')(ac')a$	$\Sigma(aa')(\beta a')(\gamma a')\delta$	$\{f_{(0)}C_3\}$	
8*	C_8	$(ab)^2(aa')(ab')(bc')b$	$\Sigma(a\beta)^2(\gamma a')(\delta a')\delta$	$\{f_{(0)}C_4\}$	Also $\{C_1C_4'\}^2$ Also $\{C_7H_{(2)}\}$
9	C_9	$(ab)^2(uc)(ca')(cb')(cc')ab^2$	$\Sigma(a\beta)^2(\beta\delta)(aa')(\gamma a')\gamma^2\delta^2$	$\{C_1C_5\}$	
10	C_{10}	$(ab)^2(bc)(aa')(ab')(bc')(cd')c^2$	$\Sigma(a\beta)^2(\alpha\gamma)(\beta a')(\delta a')\gamma^2$	$\{C_1C_6\}$	Also $\{C_7C_8\}$
11*	I_1	$(aa')(ab')(ac')(ad')$	$(aa')(\beta a')(\gamma a')(\delta a')$	$\{f_{(0)}C_7\}$	
12*	I_2	$(ab)^2(aa')(ab')(bc')(bd')$	$\Sigma(a\beta)^2(\gamma a')^2(\delta a')^2$	$\{f_1C_8\}$	Also $\{C_4C_4'\}^2$ Also $\{C_4C_8\}$
13	C_{11}	$(ab)^2(bc)(aa')(ab')(bc')(cd')(cc')c$	$\Sigma(a\beta)^2(\alpha\gamma)(\beta a')(\gamma a')(\delta a')^2\delta$	$\{C_2'C_7\}$	
14*	I_3	$(ab)^2(bc)(aa')(ab')(bc')(cd')(ce')(cf')$	$\Sigma(a\beta)^2(\alpha\gamma)(\beta a')(\gamma a')^2(\delta a')^3$	$\{f_{(0)}C_{11}\}$	

* Unique form.

TABLE VII.

QUADRIC AND QUADRIC.					
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
1*	J	$(aa')aa'$	$\Sigma(aa')\beta\beta'$	$\{f_{(0)}f_{(2)}\}$	The Cayley Symbol is $\overline{12}$
2*	Δ	$(aa')^2$	$\Sigma'(aa')(\beta\beta')$	$\{f_{(0)}f_{(2)}\}^2$	The Cayley Symbol is $\overline{12}_2$
QUADRIC AND CUBIC.					
1*	ϑ	$(aa')aa'^2$	$\Sigma(aa')\beta\beta'\gamma'$	$\{f_{(0)}f_{(2)}\}$	See J of Quadric and Quadric
2*	L_1	$(aa')^2a'$	$\Sigma'(aa')(\beta\beta')\gamma'$	$\{f_{(0)}f_{(2)}\}^2$	See Δ of Quadric and Quadric.
3*	$\mathcal{Q}$	$(a'b')^2(a'a')ab'$	$\Sigma(a'\beta')^2(a\gamma')\beta\gamma'$	$\{f_{(0)}H_{(2)}\}$	
4*	I	$(a'b')^2(aa')(ab')$	$\Sigma(a'\beta')^2(a\gamma')(\beta\gamma')$	$\{f_{(0)}H_{(2)}\}^2$	
5*	L_2	$(aa')^2(ha')b$	$\Sigma'(aa')(\beta\beta')(a\gamma')\beta$	$\{L_1f_{(0)}\}$	
6*	L_3	$(a'b')^2(a'c')(ac')^2b'$	$\Sigma(a'\gamma')^2(\beta'\gamma')(aa')(\beta\beta')\beta'$	$\{L_1H_{(2)}\}$	
7	L_4	$(a'b')^2(c'c')(ac')^2(bb')b$	$\Sigma(a'\gamma')^2(\beta'\gamma')(aa')(\beta\beta')^2a$	$\{L_3f_{(0)}\}$	
8	R	$(aa')^2(bb')^2(ca')(cb')$	$\Sigma'(aa')^2(\beta\beta')^2(a\gamma')(\beta\gamma')$	$\{L_1L_3\}$	
9*	M	$(a'b')^2(a'c')(ac')^2(bd')^2(cd')(cb')$	$\Sigma(a'\beta')^2(\beta'\gamma')(aa')^2(a\beta')(\beta\gamma')^3$	$\{L_2L_3\}$	

* A unique form.

TABLE VIII.

QUADRIC AND QUARTIC.					
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
1*	L	$(aa')aa'^3$	$\Sigma(aa')\beta\beta'\gamma'\delta'$	$\{f_{(1)}f_{(2)}\}$	Clebsch's A
2*	ψ	$(aa')^2a'^2$	$\Sigma(aa')(\beta\beta')\gamma'\delta'$	$\{f_{(1)}, f_{(2)}\}^2$	
3*	Ψ	$(aa')^2(ba')a'b$	$\Sigma(aa')(\beta\beta')(\alpha\gamma')\beta\delta'$	$\{\psi f_{(1)}\}$	
4*	φ	$(aa')^2(ba')^2$	$\Sigma(aa')(\beta\beta')(\alpha\gamma')(\beta\delta')$	$\{\psi f_{(1)}\}^2$	
5*	M	$(a'b')^2(aa')aa'b'^2$	$\Sigma(a'\beta')^2(\alpha\gamma')\beta\gamma'\delta'^2$	$\{f_{(1)}H_{(2)}\}$	
6	χ	$(a'b')^2(aa')^2b'^2$	$\Sigma(a'\beta')^2(\alpha\gamma')\beta\gamma'\delta'^2$	$\{f_{(1)}H_{(2)}\}^2$	Clebsch's B
7*	X	$(a'b')^2(aa')^2(bb')bb'$	$\Sigma(a'\beta')^2(\alpha\gamma')(\beta\gamma')\beta\delta'$	$\{\chi f_{(1)}\}$	
8	Σ	$(a'b')^2(aa')^2(bb')^2$	$\Sigma(a'\beta')^2(\alpha\gamma')^2(\beta\delta')^2$	$\{\chi f_{(1)}\}^2$	
9	τ	$(a'b')^2(aa')^2(bc')^2(b'c')b'c'$	$\Sigma(a'\beta')^2(\alpha\gamma')^2(\beta\beta')(\beta\gamma')(\alpha\delta')\delta'^2$	$\{\psi\chi\}$	Clebsch's $\{\psi H, \}$
10*	C	$(a'b')^2(aa')^2(bc')^2(b'c')(cb')(cc')$	$\Sigma(a'\beta')^2(a\beta')(\alpha\gamma')^3(\beta\delta')^3$	$\{\tau f_{(1)}\}^2$	
11	K	$(a'b')^2(aa')^2(b'c')b'c'^3$	$\Sigma(a'\beta')^2(\alpha\gamma')(\beta\gamma')(\alpha\delta')\beta\gamma'\delta'^2$	$\{\chi f_{(2)}\}$	

* A unique form.

TABLE IX.

CUBIC AND CUBIC.					
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.	Remarks.
1*	J	$(aa')a^2a'^2$	$\Sigma(aa')\beta\beta\gamma\gamma'$	$\{f_{(1)}f_{(2)}\}$	Clebsch's J
2*	θ	$(aa')^2aa'$	$\Sigma(aa')(\beta\beta')\gamma\gamma'$	$\{f_{(1)}f_{(2)}\}^2$	
3*	P	$(aa')^3$	$\Sigma(aa')(\beta\beta')(\gamma\gamma')$	$\{f_{(1)}f_{(2)}\}^3$	
4	C_1	$(a'b')^2(aa')a^2b'$	$\Sigma(a'\beta')^2(a\gamma')\beta\gamma\gamma'$	$\{H_{(2)}f_{(1)}\}$	
5*	π	$(a'b')^2(aa')(ab')a$	$\Sigma(a'\beta')^2(a\gamma')(\beta\gamma')\gamma$	$\{H_{(2)}f_{(1)}\}^2$	
6	C_2	$(ab)^2(aa')ba^2$	$\Sigma(a'\beta')^2(\gamma a')\beta'\gamma\gamma'$	$\{H_{(1)}f_{(2)}\}$	
7*	p	$(ab)^2(aa')(ba')a'$	$\Sigma(a'\beta')^2(\gamma a')(\gamma\beta')\gamma'$	$\{H_{(1)}f_{(2)}\}^2$	
8	C_3	$(ab)^2(a'b')^2(aa')bb'$	$\Sigma(a'\beta')^2(\gamma a')(\gamma\beta')\gamma'$	$\{H_{(1)}H_{(2)}\}$	
9	N	$(ab)^2(a'b')^2(aa')(bb')$	$\Sigma(a'\beta')^2(a'\beta')^2(\gamma\gamma')^2$	$\{H_{(1)}H_{(2)}\}^2$	Clebsch's T
10*	C_4	$(a'b')^2(c'd')^2(aa')(ab')(ac')d'$	$\Sigma(a'\beta')^4(a\gamma')(\beta\gamma')(\gamma\gamma')\gamma'$	$\{H_{(2)}^2f_{(1)}\}^3$	
11*	C_5	$(ab)^2(cd)^2(aa')(ba')(ca')d$	$\Sigma(a'\beta')^4(\gamma a')(\gamma\beta')(\gamma\gamma')\gamma$	$\{H_{(1)}^2f_{(2)}\}^3$	
12	C_6	$(a'b')^2(a'c')(ac')^2ab$	$\Sigma(a'\beta')^2(a'\gamma')(a'\beta')(\beta\gamma')\gamma\gamma'$	$\{J_{(2)}f_{(1)}\}^2$	
13*	M	$(a'b')^2(a'c')(ac')^2(ab')$	$\Sigma(a'\beta')^2(a'\gamma')(a'\beta')(\beta\gamma')(\gamma\gamma')$	$\{J_{(2)}f_{(1)}\}^3$	
14	C_7	$(ab)^2(ac)(ca')^2ba'$	$\Sigma(a'\beta')^2(a\gamma')(\beta a')(\gamma\beta')\gamma\gamma'$	$\{J_{(1)}f_{(2)}\}^2$	
15*	M'	$(ab)^2(ac)(ca')^2ba'$	$\Sigma(a'\beta')^2(a\gamma')(\beta a')(\gamma\beta')\gamma\gamma'$	$\{J_{(1)}f_{(2)}\}^3$	
16	Q	$(ab)^2(ac)(a'b')^2(a'c')(bb')(cc')^2$	$\Sigma(a'\beta')^2(a\gamma')(a'\beta')^2(a'\gamma')(\beta\beta')(\gamma\gamma')^2$	$\{J_{(1)}J_{(2)}\}^3$	
17	C_8	$(ab)^3(a'b')^2(a'c')(ab')(bc')c'$	$\Sigma(a'\beta')^2(a'\beta')^2(a'\gamma')(\gamma\gamma')\beta\gamma'$	$\{H_{(1)}f_{(2)}\}^2$	
18	C_9	$(a'b')^2(ab)^2(ac)(ba')(cb')c$	$\Sigma(a'\beta')^2(a'\beta')^2(a\gamma')(\beta\gamma')(\gamma\gamma')\beta$	$\{H_{(2)}f_{(1)}\}^2$	

* A unique form.

TABLE X.

CUBIC AND QUARTIC.				
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.
1*	C_1	$(aa')^2a^3$	$\Sigma(aa')\beta\gamma\beta'\gamma'\delta'$	$\{f_{(1)}f_{(2)}\}$
2*	C_2	$(aa')^2aa'^2$	$\Sigma(aa')(\beta\beta')\gamma\gamma'\delta'$	$\{f_{(1)}f_{(2)}\}^2$
3*	p	$(aa')^3a'$	$\Sigma(aa')(\beta\beta')(\gamma\gamma')\delta'$	$\{f_{(1)}f_{(2)}\}^3$
4	C_3	$(ab)^2(aa')ba^3$	$\Sigma(a\beta)^2(\gamma\alpha')\gamma\beta'\gamma'\delta'$	$\{H_{(1)}f_{(2)}\}$
5	C_4	$(ab)^2(aa')(ba')a^2$	$\Sigma(a\beta)^2(\gamma\alpha')(\gamma\beta')\gamma'\delta'$	$\{H_{(1)}f_{(2)}\}^2$
6	C_5	$(ab)^2(ac)(ca')^2ba^2$	$\Sigma(a\beta)^2(a\gamma)(\beta\alpha')(\gamma\beta')\gamma\gamma'\delta'$	$\{J_{(1)}f_{(2)}\}^2$
7	s	$(ab)^2(ac)(ba')(ca')^2a'$	$\Sigma(a\beta)^2(a\gamma)(\beta\alpha')(\gamma\beta')(\gamma\gamma')\delta'$	$\{J_{(1)}f_{(2)}\}^3$
8	C_6	$(a'b')^2(aa')a^2a'b'^2$	$\Sigma(a'\beta')^2(a\gamma')\beta\gamma\gamma'\delta'^2$	$\{H_{(2)}f_{(1)}\}$
9	C_7	$(a'b')^2(aa')^2ab'^2$	$\Sigma(a'\beta')^2(a\gamma')(\beta\gamma')\gamma'\delta'^2$	$\{H_{(2)}f_{(1)}\}^2$
10*	π	$(a'b')^2(aa')^2(ab')b'$	$\Sigma(a'\beta')^2(a\gamma')(\beta\gamma')(\gamma'\delta')\delta'$	$\{H_{(2)}f_{(1)}\}^3$
11	C_8	$(ab)^2(a'b')^2(aa')ba'b'^2$	$\Sigma(a\beta)^2(a'\beta')^2(\gamma\gamma')\gamma'\delta'^2$	$\{H_{(1)}H_{(2)}\}$
12	C_9	$(ab)^2(a'b')^2(aa')(bb')b'c'$	$\Sigma(a\beta)^2(a'\beta')^2(\gamma\gamma')^2\beta\delta'^3$	$\{H_{(1)}H_{(2)}\}^2$
13	C_{10}	$(ab)^2(a'b')^2(a'c')(aa')(bb')b'c'$	$\Sigma(a'\beta')^2(a'\gamma')(a\beta')(\beta\gamma')(\gamma\gamma')\delta'^3$	$\{H_{(2)}J_{(1)}\}^2$
14	C_{11}	$(a'b')^2(a'c')(ac')^3a'b'^2$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(\gamma\gamma')^2\beta\delta'^2$	$\{f_{(1)}J_{(2)}\}^3$
15	C_{12}	$(ab)^2(ac)(a'b')^2(ca')^2bb'^2$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(\gamma\gamma')^2(\beta\delta')\delta'$	$\{H_{(2)}J_{(1)}\}^2$
16	σ	$(ab)^2(ac)(a'b')^2(bb')(ca')^2b'$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(a'\gamma')(\beta\beta')(\gamma\gamma')^2\delta'^3$	$\{H_{(2)}J_{(1)}\}^3$
17	C_{13}	$(ab)^2(ac)(a'b')^2(a'c')(bb')(cc')^2a'b'c'$		$\{J_{(1)}J_{(2)}\}^3$

* A unique form.

18	C_{14}	$(aa')^3ba'\delta^2$	$\Sigma(aa')(\beta\beta')(\gamma\gamma')(a\delta')\beta\gamma$	$\{f_{11}p\}$
19	q	$(ab)^2(ac)(ba')(ca')^3b$	$\Sigma(a\beta)^2(aa')(\beta\beta')(\gamma\gamma')(\gamma\delta')\gamma$	$\{H_{10}p\}$
20	C_{15}	$(ab)^2(ac)(ba')(da')^3c^2$	$\Sigma(a\beta)^2(a\gamma)(aa')(\beta\beta')(\gamma\gamma')(\beta\delta')\gamma^2$	$\{J_{10}p\}$
21	C_{16}	$(ab)^2(cd)^2(aa')(ba')(ca')da'$	$\Sigma(a\beta)^4(\gamma a')(\gamma\beta')(\gamma\gamma')\gamma\delta'$	$\{C_4H_{10}\}$
22*	B	$(ab)^2(cd)^2(aa')(ba')(ca')(da')$	$\Sigma(a\beta)^4(\gamma a')(\gamma\beta')(\gamma\gamma')(\gamma\delta')$	$\{C_4H_{10}\}^2$
23*	C_{17}	$(ab)^2(ac)(de)^2(ba')(ca')^2(da')e$	$\Sigma(a\beta)^4(a\gamma)(\beta a')(\gamma\beta')(\gamma\gamma')(\gamma\delta')\gamma$	$\{H_{10}^8\}$
24	C_{18}	$(a'b')^2(aa')^2(ab')(bb')b^2$	$\Sigma(a\beta)^2(a\gamma)(\beta\gamma')(\gamma\delta')^2a\beta$	$\{f_{10}\pi\}$
25	C_{19}	$(ab)^2(a'b')^2(ca')^2(ab')(cb')b$	$\Sigma(a\beta)^2(a\beta')^2(a\gamma)(\beta\gamma')(\gamma\delta')^2\gamma$	$\{H_{10}\pi\}$
26	C_{20}	$(ab)^2(ac)(a'b')^2(da')(bb')(db')c^2$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(a\gamma')(\beta\gamma')(\gamma\delta')^2\beta\gamma$	$\{J_{10}\pi\}$
27	C_{21}	$(ab)^2(ac)(de)^2(a'b')^2(ca')^2(bb')(db')e$	$\Sigma(a\beta)^4(a\gamma)(a'\beta')^2(\gamma\gamma')^2(\beta\delta')(\gamma\delta')\gamma$	$\{H_{10}\sigma\}$
28	C_{22}	$(ab)^2(cd)^2(a'b')^2(aa')(ca')(bb')db'$	$\Sigma(a\beta)^4(a'\beta')^2(\gamma\gamma')^2(\gamma\delta')\gamma\delta'$	$\{C_3H_{10}\}$
29	D	$(ab)^2(cd)^2(a'b')^2(aa')(ca')(bb')(db')$	$\Sigma(a\beta)^4(a'\beta')^2(\gamma\gamma')^2(\gamma\delta')^2$	$\{C_3H_{10}\}^2$
30	C_{23}	$(ab)^2(a'b')^2(a'c')(aa')(bb')(cc')^3b'$	$\Sigma(a\beta)^2(a'\beta')^2(a'\gamma')(a\beta')(\gamma\gamma')^2(\beta\delta')(\gamma\delta')\delta'$	$\{C_{10}f_{10}\}^3$
31	C_{24}	$(a'b')^2(a'c')(ac')^3(bb')^3ba'$	$\Sigma(a'\beta')^2(a'\gamma')(a\beta')(\beta\gamma')(\gamma\gamma')(a\delta')(\beta\delta')\gamma\delta'$	$\{C_{11}f_{10}\}^2$
32	F	$(a'b')^2(a'c')(ac')^3(ba')(bb')^2$	$\Sigma(a'\beta')^2(a'\gamma')(a\beta')(\beta\gamma')(\gamma\gamma')(a\delta')(\beta\delta')(\gamma\delta')$	$\{C_{11}f_{10}\}^3$
33	G	$(ab)^2(ac)(a'b')^2(a'c')(da')(bb')(db')(cc')^2(dc')$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(a'\gamma')(\beta\beta')(\gamma\gamma')^2(a\delta')(\beta\delta')(\gamma\delta')$	$\{C_{13}H_{10}\}^2$
34	C_{25}	$(ab)^2(ac)(de)^2(a'b')^2(a'c')(da')(bb')(cb')(cc')^2c'$	$\Sigma(a\beta)^4(a\gamma)(a'\beta')^2(a'\gamma')(\beta\beta')(\gamma\gamma')^2(\gamma\delta')^2\delta'$	$\{C_{14}p\}$
35	C_{26}	$(aa')^3(ba')(bb')(cb')^3b$	$\Sigma(aa')^2(\beta\beta')^2(\gamma\gamma')^2(a\delta')(\beta\delta')\gamma$	$\{C_{14}^8\}$
36	C_{27}	$(aa')^3(ba')(cd)^2(ce)(bb')(db')(eb')^2b$	$\Sigma(a\beta)^2(a\gamma)(aa')(\beta a')(\beta\beta')(\gamma\gamma')^2(a\delta')(\beta\delta')\gamma$	$\{C_{14}\pi\}$
37	C_{28}	$(a'b')^2(aa')^2(ab')(cb')(bc')^3(cc')c$	$\Sigma(a'\beta')^2(aa')(\beta\beta')(a\gamma')(\beta\gamma')(\gamma\gamma')(a\delta')(\gamma\delta')^2\beta$	$\{C_{10}H_{10}\}^2$
38	C_{29}	$(ab)^2(cd)^2(a'b')^2(a'c')(aa')(bb')(cb')(dc')c^2$	$\Sigma(a\beta)^4(a'\beta')^2(a'\gamma')(\gamma\gamma')^2(\gamma\delta')^2\beta\delta'$	$\{C_{11}J_{10}\}^2$
39	C_{30}	$(ab)^2(ac)(a'b')^2(a'c')(cb')^2(dc')^3ba'$	$\Sigma(a\beta)^2(a\gamma)(a'\beta')^2(a'\gamma')(a\beta')(\beta\gamma')(\gamma\gamma')(\gamma\delta')^2\beta\delta'$	

* A unique form.

TABLE X—Continued.

CUBIC AND QUARTIC.				
No.	Name.	Aronhold and Clebsch Symbol.	Root Symbol.	Transvectant.
40	<i>K</i>	$(ab)^2(aa')(ca')^3(bb')(db')^3$	$\Sigma'(a\beta)^2(aa')^2(\beta\beta')^2(\gamma\gamma')^2(\gamma\delta')^2$	$\{qp\}$
41	<i>E</i>	$(ab)^2(aa')(ca')^3(de)^2(df')(bb')(eb')(fb')^2$	$\Sigma'(a\beta)^4(a\gamma')(a\alpha')(\beta\alpha')(\beta\beta')(\gamma\beta')(\gamma\gamma')^2(\gamma\delta')^2$	$\{qs\}$
42	<i>I</i>	$(ab)^2(ua')(ca')^3(bc')^2(db')^2(bc')(dc')$	$\Sigma'(a\beta)^2(a'\beta')^2(aa')(\beta\beta')(\alpha\gamma')(\beta\gamma')(\gamma\gamma')(\gamma\delta')^3$	$\{q\pi\}$
43	<i>L</i>	$(ab)^2(aa')(ca')^3(de)^2(df')(bc')^2(bb')^2(bc')(ec')$	$\Sigma'(a\beta)^4(a\gamma')(a'\beta')^2(aa')(\beta\beta')(\gamma\gamma')^3(\beta\delta')(\gamma\delta')^2$	$\{q\sigma\}$
44	<i>M</i>	$(aa')^3(ba')(bb')(cb')^3(bc')(dc')^3$	$\Sigma'(aa')^3(\beta\beta')^2(\gamma\gamma')^3(a\delta')(\beta\delta')(\gamma\delta')$	$\{C_{26}p\}$
45	<i>N</i>	$(aa')^3(ba')(bb')(cb')^3(bc')(de)^2(df')(ec')(fc')^2$	$\Sigma'(a\beta)^2(a\gamma')(aa')^2(\beta\alpha')(\beta\beta')^2(\gamma\beta')(\gamma\gamma')^3(a\delta')(\beta\delta')(\gamma\delta')$	$\{C_{26}^8s\}$
46	<i>O</i>	$(aa')^3(ba')(bb')(cb')^3(c'd')^2(dc')^2(bd')(dd')$	$\Sigma'(a'\beta')^2(aa')^2(\beta\beta')^2(a\gamma')(\beta\gamma')(\gamma\gamma')^2(a\delta')(\beta\delta')(\gamma\delta')^2$	$\{C_{26}^{\pi}\pi\}$
47	<i>R</i>	$(ab)^2(a'b')^2(ca')^2(cb')(ab')(c'd')^2(ad')(dd')(dc')^2$	$\Sigma'(a\beta)^2(a'\beta')^4(a\gamma')^2(\beta\gamma')^2(\gamma\delta')^4$	$\{C_{19}^{\pi}\pi\}$
48	<i>S</i>	$(ab)^2(a'b')^2(ca')^2(cb')(ab')(de)^2(df)(c'd')^2(ad')(ed')(fc')^2$	$\Sigma'(a\beta)^4(a\gamma')(a'\beta')^4(a\gamma')(\beta\gamma')(\gamma\gamma')^2(\beta\delta')(\gamma\delta')^3$	$\{C_{19}\sigma\}$
49	<i>C₃₁</i>	$(ab)^2(ac)(ba')(ca')^2(bc')^2(ea')(db')^2(dc')(ec')e$	$\Sigma'(a\beta)^2(a\gamma')(a'\beta')^2(\beta\alpha')(\gamma\beta')(\alpha\gamma')(\beta\gamma')(\gamma\gamma')^2(a\delta')(\gamma\delta')^2\beta$	$\{C_{18}^8s\}$
50	<i>C₃₂</i>	$(a'b')^2(aa')^2(ab')(bb')(c'd')^2(cc')^2(bd')(cd')b$	$\Sigma'(a'\beta')^4(a\gamma')^2(\beta\gamma')^2(a\delta')(\gamma\delta')^3\beta$	$\{C_{18}^{\pi}\pi\}$
51	<i>C₃₃</i>	$(ab)^2(ac)(a'b')^2(ca')^2(bb')(c'd')^2(dc')^2(dd')(ed')(eb')e$	$\Sigma'(a\beta)^2(a\gamma')(a'\beta')^4(a\gamma')(\beta\gamma')(\gamma\gamma')^2(\beta\delta')^2(\gamma\delta')^2a$	$\{C_{18}\sigma\}$
52	<i>T</i>	$(ab)^2(cd)^2(ef)^2(a'b')^2(a'c')(aa')(bb')(cb')(dc')(ec')(fc')$	$\Sigma'(a\beta)^6(a'\beta')^2(a'\gamma')(\gamma\beta')(\gamma\gamma')^2(\gamma\delta')^3$	$\{C_{29}H_1\}^2$
53	<i>U</i>	$(aa')^3(ba')(cd)^2(ce)(bb')^2(db')(eb')(c'd')^2(fc')^2(bd')(fd')$	$\Sigma'(a\beta)^2(a\gamma')(a'\beta')^2(aa')(\beta\alpha')(\beta\beta')(\gamma\beta')(\alpha\gamma')(\beta\gamma')(\gamma\gamma')^2(a\delta')(\gamma\delta')^3$	$\{C_{27}^{\pi}\pi\}$
54	<i>V</i>	$(a'b')^2(aa')^2(ab')(cb')(bc')^3(cc')(d'e)^2(dd')^2(ce')(de')$	$\Sigma'(a'\beta')^4(aa')(\beta\beta')(\alpha\gamma')^2(\beta\gamma')^2(\gamma\gamma')^2(a\delta')(\beta\delta')(\gamma\delta')^3$	$\{C_{26}^{\pi}\pi\}$
55	<i>W</i>	$(a'b')^2(aa')^2(ab')(bb')(c'd')^2(cc')^2(bd')(cd')(de)^2(df)(be')(fe')^2$	$\Sigma'(a\beta)^2(a\gamma')(a'\beta')^4(\beta\alpha')(\gamma\beta')(\alpha\gamma')^2(\beta\gamma')^2(a\delta')(\beta\delta')(\gamma\delta')^3$	$\{C_{26}^8s\}$

ERRATA in the paper on CONCOMITANT BINARY FORMS IN TERMS OF THE ROOTS
which appeared in Vol. LX.

- P. 96, l. 22. Substitute *four* for *five*.
P. 107, l. 20. Substitute *covariant* for *invariant*.
Pp. 110–114. An error in the subject-matter of Arts. 15–18 may be corrected by substituting *unique** for *irreducible* in l. 11 and l. 15, p. 110, and in l. 3, p. 112, and substituting *that is* for *and* in l. 12, p. 110; and by omitting *irreducible* in l. 12, p. 110, l. 14, p. 111, l. 27, p. 112, and in l. 20, p. 114, and both *an irreducible form* and the following word *irreducible* in l. 9, p. 113.
P. 116, Art. 21. Substitute *form-systems* for *form system* in l. 1, and *four* for *five* in l. 3.
P. 118, l. 13. Substitute $(\delta\varepsilon)^2$ for $(\delta\varepsilon)$.
P. 119, l. 5. Substitute $-$ for $+$.
P. 124, l. 18. Insert $\left[\frac{\beta_2}{\beta_1} - \frac{a_2}{a_1}\right]e_{12}\left[\frac{\gamma_2}{\gamma_1} - \frac{\beta_2}{\beta_1}\right]e_{23}\dots\left[\frac{x}{y} + \frac{a_2}{a_1}\right]e_1\dots$ after Σ .
P. 124, l. 23. Omit *a covariant, and hence*.
P. 125, l. 8. Substitute *the summation* for Σ .
P. 127, l. 17 and 18. Change θ to Θ .
P. 140, l. 18. Invert last fraction.
P. 146, l. 2. Omit *fixed*. l. 13. Insert 57 as no. of Art.
Pp. 155–6, References. Substitute Faà for F. F.; and Hilbert for Hibbert.

* See the preceding paper for a definition of a *unique form*.